FORCE COMPUTERS
A SOLECTRON COMPANY

SYS68K/CPU-30 R4

Installation Guide

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1 Safety Notes

This section provides safety precautions to follow when installing, operating, and maintaining the SYS68K/CPU-30 R4.

We intend to provide the necessary information to install and handle the SYS68K/CPU-30 R4 in this Installation Guide. However, as the product is complex and its usage manifold, we do not guarantee that the given information is complete. If you need additional information, ask your Force Computers representative.

The SYS68K/CPU-30 R4 has been designed to meet the standard industrial safety requirements. It must not be used except in its specific area of office telecommunication industry and industrial control.

Only personnel trained by Force Computers or persons qualified in electronics or electrical engineering are authorized to install, maintain or operate the SYS68K/CPU-30 R4. The information given in this manual is meant to complete the knowledge of a specialist and must not be taken as replacement for qualified personnel.

EMC

The board has been tested in a Standard Force Computers system and found to comply with the limits for a Class A digital device in this system, pursuant to part 15 of the FCC Rules respectively EN 55022 Class A. These limits are designed to provide reasonable protection against harmful interference when the system is operated in a commercial, business or industrial environment.

The board generates and uses radio frequency energy and, if not installed properly and used in accordance with this Installation Guide, may cause harmful interference to radio communications. Operating the system in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

If boards are integrated into open systems, always cover empty slots to ensure proper EMC shielding.

Installation

Electrostatic discharge and incorrect board installation and removal can damage circuits or shorten their life. Therefore:

- Before installing or removing the board, read section 3 "Installation" on page 9.
- Before touching boards or electronic components, make sure that you are working in an ESD-safe environment.
- When plugging the board in or removing it, do not press on the front panel but use the handles.
- Before installing or removing an additional device or module, read the respective documentation.
- Make sure that the board is connected to the VMEbus via both, P1 and P2, and that power is available on all power pins.

Switch Settings

Before powering up the board check that the default switch settings are correct as outlined in section 3.2 "Default Switch Settings" on page 12.

Operation

When operating the board in areas of electromagnetic radiation ensure that the board is bolted on the VME system and shielded by enclosure.

Make sure that contacts and cables of the board cannot be touched while the board is operating.

Replacement /Expansion

Only replace or expand components or system parts with those recommended by Force Computers. Otherwise, you are fully responsible for the impact on EMC and the possibly changed functionality of the product.

Check the total power consumption of all components installed (see the technical specification of the respective components). Ensure that any individual output current of any source stays within its acceptable limits (see the technical specification of the respective source).

Battery Change

If a Lithium battery on the board has to be exchanged, observe the following safety notes:

- Incorrect exchange of Lithium batteries can result in a hazardous explosion.
- Always use the same type of Lithium battery as is already installed.

Environment

Always dispose used batteries and/or old boards according to your country's legislation, if possible in an environmentally acceptable way.

2 Sicherheitshinweise

Dieser Abschnitt enthält Sicherheitshinweise, die bei Einbau, Betrieb und Wartung des SYS68K/CPU-30 R4 zu beachten sind.

Wir sind darauf bedacht, alle notwendigen Informationen zum Einbau und zum Umgang mit dem SYS68K/CPU-30 R4 in diesem Handbuch bereit zu stellen. Da es sich jedoch bei dem SYS68K/CPU-30 R4 um ein komplexes Produkt mit vielfältigen Einsatzmöglichkeiten handelt, können wir die Vollständigkeit der im Handbuch enthaltenen Informationen nicht garantieren. Falls Ihnen Informationen fehlen sollten, wenden Sie sich bitte an Ihren Vertreter von Force Computers.

Das SYS68K/CPU-30 R4 erfüllt die für die Industrie geforderten Sicherheitsvorschriften und darf ausschliesslich für Anwendungen in der Telekommunikationsindustrie und im Zusammenhang mit Industriesteuerungen verwendet werden.

Einbau, Wartung und Betrieb dürfen nur von durch Force Computers ausgebildetem oder im Bereich Elektronik oder Elektrotechnik qualifiziertem Personal durchgeführt werden. Die in diesem Handbuch enthaltenen Informationen dienen ausschliesslich dazu, das Wissen von Fachpersonal zu ergänzen, können dieses jedoch nicht ersetzen.

EMV

Das Board wurde in einem Force Computers Standardsystem getestet. Es erfüllt die für digitale Geräte der Klasse A gültigen Grenzwerte in einem solchen System gemäß den FCC-Richtlinien Abschnitt 15 bzw. EN 55022 Klasse A. Diese Grenzewerte sollen einen angemessenen Schutz vor Störstrahlung beim Betrieb des Boards in Geschäfts-, Gewerbe- sowie Industriebereichen gewährleisten.

Das Board arbeitet im Hochfrequenzbereich und erzeugt Störstrahlung. Bei unsachgemäßem Einbau und anderem als in diesem Handbuch beschriebenen Betrieb können Störungen im Hochfrequenzbereich auftreten. Wird das Board in Wohngegenden betrieben, ist der Benutzer verpflichtet, entstehende Störungen auf seine Kosten beheben zu lassen.

Wenn Sie das Board ohne ein PMC Modul verwenden, schirmen Sie freie Steckplätze mit einer Blende ab, um einen ausreichenden EMV Schutz zu gewährleisten. Wenn Sie Boards in Systeme einbauen, schirmen Sie freie Steckplätze mit einer Blende ab.

Installation

Elektrostatische Entladung und unsachgemäßer Ein- und Ausbau des Boards kann Schaltkreise beschädigen oder ihre Lebensdauer verkürzen. Beachten Sie deshalb die folgenden Punkte:

- Lesen Sie vor Ein- oder Ausbau des Boards den Abschnitt "Installation" auf Seite 9.
- Bevor Sie Boards oder elektronische Komponenten berühren, vergewissern Sie sich, dass Sie in einem ESD-geschützten Bereich arbeiten.
- Drücken Sie beim Ein- oder Ausbau des Boards nicht auf die Frontplatte, sondern benutzen Sie die Griffe.
- Lesen Sie vor Ein- oder Ausbau von zusätzlichen Geräten oder Modulen das jeweilige Benutzerhandbuch.
- Vergewissern Sie sich, dass das Board über die Stecker P1 und P2 an den VME Bus angeschlossen ist und Strom an allen Spannungskontakten anliegt.

Schaltereinstellungen

Vergewissern Sie sich vor dem Hochfahren des Boards, dass die Schalter den in Abschnitt "Default Switch Settings" auf Seite 12 beschriebenen Standardeinstellungen entsprechen.

Betrieb

Achten Sie darauf, dass die Umgebungs- und die Leistungsanforderungen während des Betriebs eingehalten werden.

Wenn Sie das Board in Gebieten mit elektromagnetischer Strahlung betreiben, stellen Sie sicher, dass das Board mit dem VME System verschraubt ist und das System durch ein Gehäuse abgeschirmt wird.

Stellen Sie sicher, dass Anschlüsse und Kabel des Boards während des Betriebs nicht berührt werden können.

Austausch/Erweiterung

Verwenden Sie bei Austausch oder Erweiterung nur von Force Computers empfohlene Komponenten und Systemteile. Andernfalls sind Sie für mögliche Auswirkungen auf EMV und geänderte Funktionalität des Produktes voll verantwortlich.

Überprüfen Sie die gesamte aufgenommene Leistung aller eingebauten Komponenten (siehe die technischen Daten der entsprechenden Komponente). Stellen Sie sicher, dass die Ausgangsströme jedes Verbrauchers innerhalb der zulässigen Grenzwerte liegen (siehe die technischen Daten des entsprechenden Verbrauchers).

Batteriewechsel

Muss eine Lithium-Batterie auf dem Board ausgewechselt werden, beachten Sie die folgenden Sicherheitshinweise:

- Ein unsachgemäßer Wechsel von Lithium-Batterien kann zu gefährlichen Explosionen führen.
- Verwenden Sie beim Batteriewechsel denselben Batterietyp, der bereits eingesetzt wurde.

Umweltschutz

Entsorgen Sie alte Boards gemäß der in Ihrem Land gültigen Gesetzgebung, wenn möglich umweltfreundlich.

3 Installation

The installation of the board is easy, requiring only a power supply and a VMEbus backplane. The power supply must meet the specifications described in Table 1, "Specifications for the CPU-30 R4 Board," on page 7. The processor board requires +5 V supply voltage; ±12 V are needed for the RS-232 serial interface and the Ethernet Interface.

For the initial power up, a terminal can be connected to the 9-pin D-Sub microconnector of serial port 1, which is located on the front panel. The serial port provides RS-232 interface signal level.

Caution

Before powering up check that the default switch settings are correct as outlined in Section 3.2 'Default Switch Settings'.

3.1 Location Diagrams of the SYS68K/CPU-30 R4

The following two location diagrams show the important components on the top side and the bottom side of the CPU-30 R4. Both of these diagrams only show the components on the board which are of interest to the user.

Figure 1 Diagram of the CPU-30 R4 (Top View)

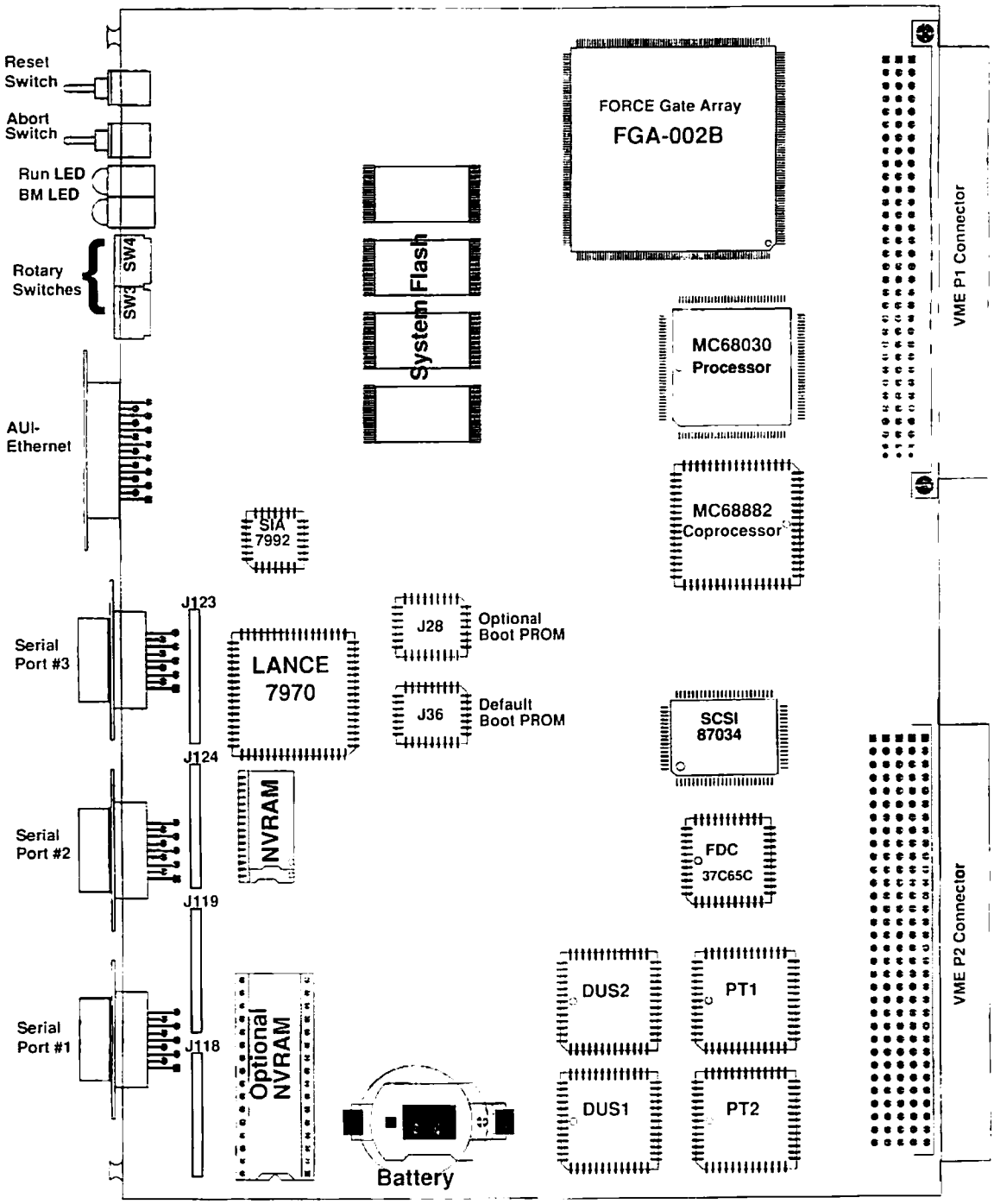
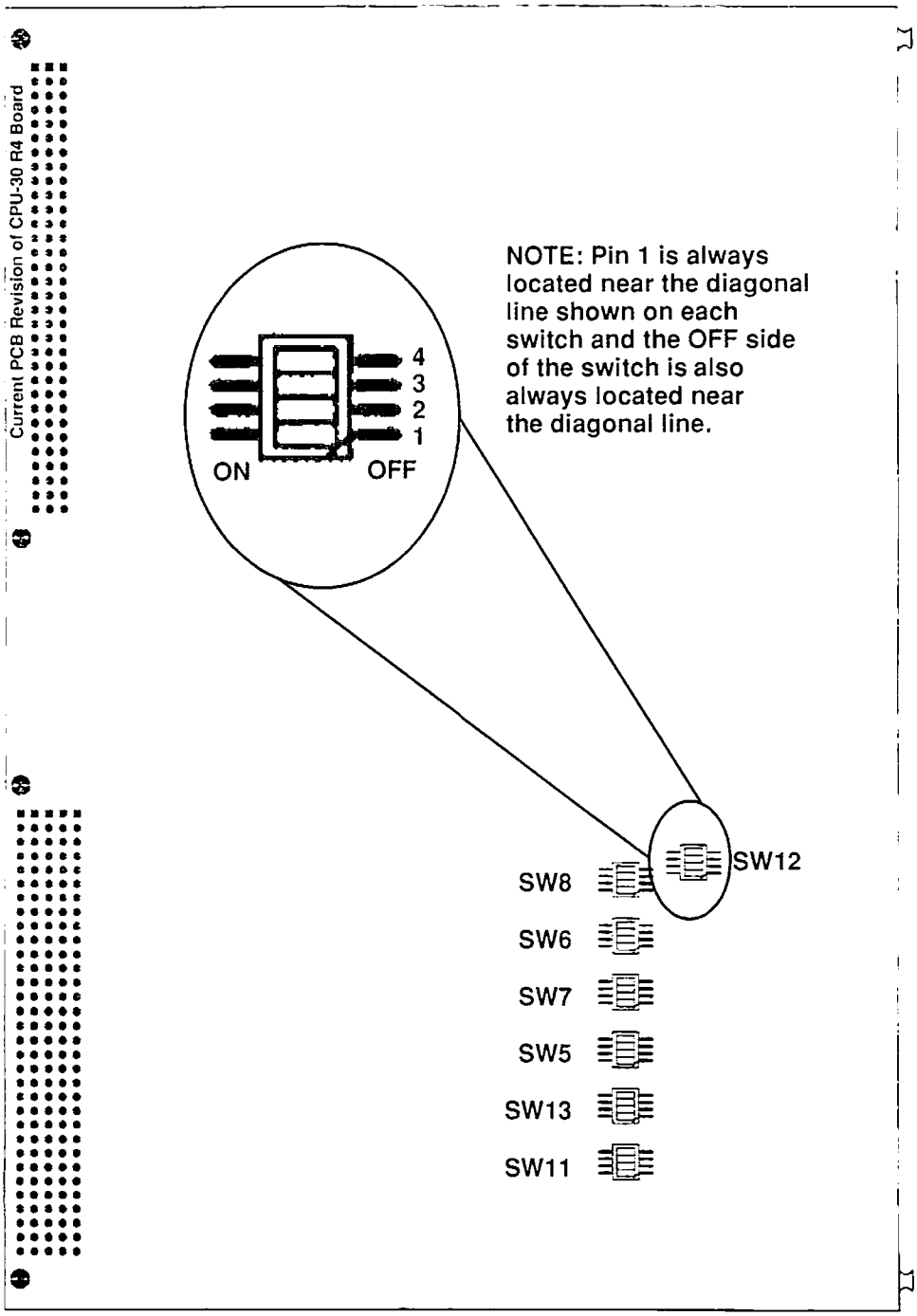


Figure 2 Diagram of the CPU-30 R4 (Bottom View)



3.2 Default Switch Settings

The following table shows the default settings for all the switches on the board.For the position of the switches on your CPU-30 R4 board see Figure 2, "Diagram of the CPU-30 R4 (Bottom View)," on page 11.

Note: **The battery backup for SRAM and RTC is disabled with the default switch setting. Stored data will be lost.**

Table 1 Default Switch Settings

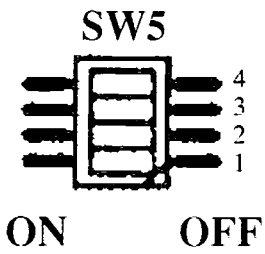
Diagram of Switch with Default Setting	Switches	Default Setting	Function
SWITCH 5			
	SW5-1	OFF	OFF=Boot PROM access to default Boot PROM and optional Boot PROM ON=Boot PROM access to optional Boot PROM only (Access to default Boot PROM is disabled)
	SW5-2	OFF	OFF=Optional Boot PROM Pinout for Flash PROM ON=Optional Boot PROM Pinout for EPROM
	SW5-3	OFF	OFF=Write to Boot PROM enabled ON=Write to Boot PROM disabled
	SW5-4	OFF	OFF=Write to System Flash Memory enabled ON=Write to System Flash Memory disabled
SWITCH 6			

Table 1 Default Switch Settings (Continued)

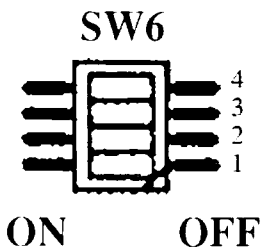
Diagram of Switch with Default Setting	Switches	Default Setting	Function
	SW6-1	OFF	BUSTIMER (1:0) SW6-1 SW6-2 Time SW6-1 OFF=VME Bustimer bit 1=1OFF OFF83.53ms SW6-1 ON=VME Bustimer bit 1=0OFF ON 1.30 ms ON OFF 81.6 µs ON ON 10.2 µs SW6-2 OFF=VME Bustimer bit 0=1 SW6-2 ON=VME Bustimer bit 0=0
	SW6-2	OFF	
	SW6-3	OFF	SLOT, BRSEL (1:0) : VME BR SLOT-x detected, 11 : 3 SW6-3 OFF=VME BRSEL bit 1=1 SLOT-x detected, 10 : 2 SW6-3 ON=VME BRSEL bit 1=0SLOT-x detected, 01 : 1 SLOT-x detected, 00 : 0 SW6-4 OFF=VME BRSEL bit 0=1SLOT-1 detected, -- : 3 SW6-4 ON=VME BRSEL bit 0=0
	SW6-4	OFF	

Table 1 Default Switch Settings (Continued)

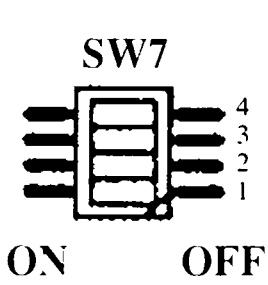
Diagram of Switch with Default Setting	Switches	Default Setting	Function
SWITCH 7			
	SW7-1	OFF	OFF=RESET Switch enabled ON=RESET Switch disabled
	SW7-2	OFF	OFF=ABORT Switch enabled ON=ABORT Switch disabled
	SW7-3	OFF	OFF=SCSI active termination enabled ON=SCSI active termination disabled
	SW7-4	OFF	OFF=additional VME Bustimer enabled if VME slot-1 function detected (otherwise disabled) ON=VME Bustimer disabled
SWITCH 8			
	SW8-1	OFF	OFF=VME slot-1 auto-detection enabled ON=VME slot-1 function disabled
	SW8-2	OFF	OFF=VME_SYSFAIL output enabled ON=VME_SYSFAIL output disabled
	SW8-3	OFF	OFF=VME_SYSRESET output enabled ON=VME_SYSRESET output disabled
	SW8-4	OFF	OFF=VME_SYSRESET input enabled ON=VME_SYSRESET input disabled
SWITCH 11			
	SW11-1	OFF	OFF=Power backup from battery disabled ON=Power backup from battery enabled
	SW11-2	OFF	OFF=Power Backup from VME STBY disabled ON=Power Backup from VME STBY enabled
	SW11-3	OFF	OFF=NVRAM supplied by Power Backup disabled ON=NVRAM supplied by Power Backup enabled
	SW11-4	OFF	OFF=Default NVRAM access only ON=Optional and default NVRAM access

Table 1 Default Switch Settings (Continued)

Diagram of Switch with Default Setting	Switches	Default Setting	Function
SWITCH 12			
	SW12-1	OFF	OFF=Serial port 1 for RS-232, Hybrid FH-002 on J119 ON=Serial port 1 for RS-422, Hybrid FH-003 or FH-422T on J119 Serial port 1 for RS-485, Hybrid FH-007 on J119
	SW12-2	OFF	OFF=Serial port 2 for RS-232, Hybrid FH-002 on J124 ON=Serial port 2 for RS-422, Hybrid FH-003 or FH-422T on J124 Serial port 2 for RS-485, Hybrid FH-007 on J124
	SW12-3	OFF	OFF=Serial port 3 for RS-232, Hybrid FH-002 on J123 ON=Serial port 3 for RS-422, Hybrid FH-003 or FH-422T on J123 Serial port 3 for RS-485, Hybrid FH-007 on J123
	SW12-4	OFF	OFF=Serial port 4 for RS-232, Hybrid FH-002 on J118 ON=Serial port 4 for RS-422, Hybrid FH-003 or FH-422T on J118 Serial port 4 for RS-485, Hybrid FH-007 on J118
SWITCH 13			
	SW13-1	OFF	OFF=Timer IRQ enabled ON=Timer IRQ disabled
	SW13-2	OFF	OFF=Watchdog reset disabled ON=Watchdog reset enabled
	SW13-3	OFF	Reserved (must be OFF)
	SW13-4	OFF	Reserved (must be OFF)

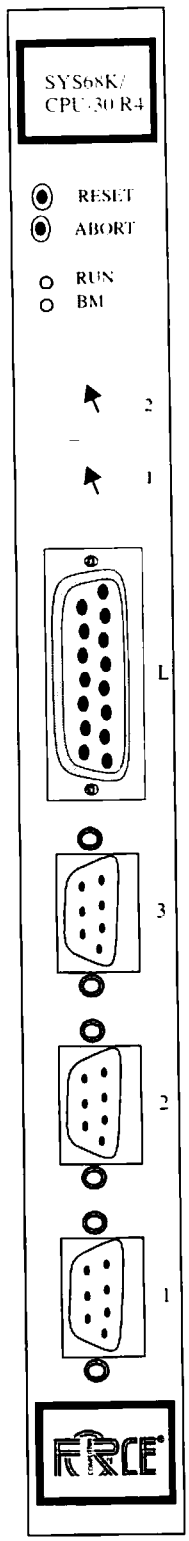
3.3 Front Panel

The table below outlines the layout on the front panel. Additionally, there is a drawing of the front panel on page 17. The front panel devices are briefly described on the pages following the drawing.

Table 2 **Front Panel Layout**

Device	Function	Name
Switch	Reset	RESET
Switch	Abort	ABORT
LED	RUN/HALT	RUN
LED	VME BM	BM
Rotary Switch	4-bit Input	2
Rotary Switch	4-bit Input	1
15-pin D-Sub connector	AUI-Ethernet Interface	L
9-pin D-Sub connector	Serial Interface	3
9-pin D-Sub connector	Serial Interface	2
9-pin D-Sub connector	Serial Interface	1

Figure 3 Front Panel



RESET and ABORT Keys

Status LEDs

Rotary Switches

15-pin D-Sub Connector

9-pin D-Sub Connector

9-pin D-Sub Connector

9-pin D-Sub Connector

3.3.1 RESET and ABORT Keys

The RESET key generates an on-board reset. The ABORT key generates an IRQ on a programmable level. Both keys can be disabled via the switches described below:

SW7-1	Description
OFF (default)	RESET key enabled
ON	RESET key disabled

SW7-2	Description
OFF (default)	ABORT key enabled
ON	ABORT key disabled

3.3.2 Status LEDs

The CPU-30 R4 includes two front panel LEDs: RUN/HALT LED and BM LED.
The RUN/HALT LED displays the condition that the processor is halted or reset is active and, in this case, the LED turns red. The RUN/HALT LED turns green on normal operation.
The bus master BM LED is used to indicate VMEbus mastership of the CPU-30 R4 and, in this case, the LED turns green.

3.3.3 Voltage Sensor

The voltage sensor generates a power-up reset if the voltage level is below 4.75 V.

3.3.4 Watchdog Timer

This timer can be enabled by software and will generate an NMI followed by a power-up reset, when it is not retriggered

SW13-2	Description
OFF (default)	Watchdog reset disabled
ON	Watchdog reset enabled

3.3.5 Two Rotary Switches

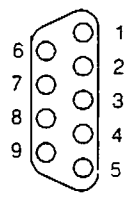
Two software readable four-bit rotary switches are installed on the board and are accessible via the front panel.

3.4 Serial I/O Channels

The CPU-30 R4 has three serial I/O channels available via 9-pin D-Sub connectors on the front panel. All channels will support RS-232, RS-422 and RS-485 interfaces via the FORCE hybrids FH-xxx. The default configuration is RS-232.
The following table shows the pinout of the serial I/O channels for RS-232.

Table 3 **9-pin D-Sub Connector Pinout[1] (RS-232)**

Pin	Signal	Direction	Description
1	DCD	in	Data Channel Detector
2	RxD	in	Receive Data
3	TxD	out	Transmit Data
4	DTR	out	Data Terminal Ready
5	GND	-	Signal Ground
6	DSR	in	Data Set Ready
7	RTS	out	Request to Send
8	CTS	in	Clear to Send
9	GND *	-	Signal Ground



1. Default terminal port setup: 9600 Baud, 8 data bits, 1 stop bit, no parity.

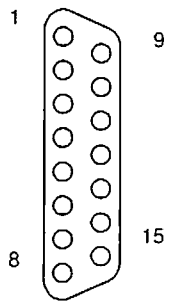
Note: ***With FH-002, this signal is provided by the hybrid being used. The signal DTR is always driven active and the signal DSR is always read active by software. The RS-232 interface on your current CPU-30 revision 4.x board is fully compatible to the RS-232 interface on the earlier CPU-30 revision 3.2 board. However, the default jumper settings prescribed for the earlier board must be used to obtain this functionality.**

3.5 AUI-Ethernet

The AUI-Ethernet Interface is available on the front panel via a 15-pin D-Sub connector.
The unique Ethernet address is displayed by the banner when entering the FGA Boot debugger. FGA Boot also provides a utility function to get the CPU board's Ethernet address: "#40 (0x28) Get Ethernet Number".
The following table shows the pinout of the AUI-Ethernet connector

Table 4 **15-pin AUI-Ethernet Connector**

Pin	Description
1	GND
2	Collision Detect+
3	Transmit Data+
4	GND
5	Receive Data+
6	GND
7	Not connected
8	GND
9	Collision Detect-
10	Transmit Data-
11	GND
12	Receive Data-
13	+12V
14	GND
15	Not connected



3.6 SCSI

The MB87033/34 provides an 8-bit single-ended SCSI interface. It is routed to the VMEbus P2 connector.
The termination is switch selectable and "TERMPWR" is supported. The following switches control the SCSI termination.

SW7-3	Description
OFF (default)	SCSI active termination enabled
ON	SCSI active termination disabled

Note: **TERMPWR is always supplied; if termination power is supplied externally by a source other than the VME connector, the active termination is still maintained, although the VME may not be powered.**

3.7 Parallel I/O (Option)

The parallel I/O signals are only available with the optional 5-row VMEbus P2 connector.

3.8 Connector Pinout for VMEbus P2

Table 5 Signal Assignment of the VME P2 Connector

PIN	Row Z (factory option)	Row A	Row C	Row D (factory option)
1	PIT2 A0	SCSI Data 0	FDC RPM (TxD Port 2)	NC
2	GND	SCSI Data 1	FDC HLO-AD (FDC EJECT) (RxD Port 2)	NC
3	PIT2 A1	SCSI Data 2	FDC DSEL2	TxD Port 1
4	GND	SCSI Data 3	FDC INDEX	RxD Port 1
5	PIT2 A2	SCSI Data 4	FDC DSEL1	RTS Port 1
6	GND	SCSI Data 5	FDC DSEL2	CTS Port 1
7	PIT2 A3	SCSI Data 6	FDC DSEL1	DTR Port 1
8	GND	SCSI Data 7	FDC MO-TOR	DCD Port 1
9	PIT2 A4	SCSI DP	FDC DIREC	GND Port 1
10	GND	GND	FDC STEPX	TxD Port 2
11	PIT2 A5	GND	FDC WDA-TA	RxD Port 2
12	GND	GND	FDC WGATE	RTS Port 2
13	PIT2 A6	TERMPWR	FDC TRK00	CTS Port 2
14	GND	GND	FDC WPROT	DTR Port 2
15	PIT2 A7	GND	FDC RDA-TA	DCD Port 2
16	GND	SCSI ATN	FDC SDSEL	GND Port 2
17	PIT2 H1	GND	FDC RDY	TxD Port 3
18	GND	SCSI BSY	(RTS Port 2)	RxD Port 3

Table 5 Signal Assignment of the VME P2 Connector (Continued)

PIN	Row Z (factory option)	Row A	Row C	Row D (factory option)
19	PIT2 H2	SCSI ACK	GND	RTS Port 3
20	GND	SCSI RST	GND	CTS Port 3
21	PIT2 H3	SCSI MSG	(CTS Port 2)	DTR Port 3
22	GND	SCSI SEL	GND	DCD Port 3
23	PIT2 H4	SCSI CD	GND	GND Port 3
24	GND	SCSI REQ	(TxD Port 3)	DSR Port 1
25	PIT1 H1	SCSI IO	(RxD Port 3)	DSR Port 2
26	GND	(RTS Port 1)	(RTS Port 3)	DSR Port 3
27	PIT1 H2	GND	(CTS Port 3)	PIT1 C0
28	GND	(CTS Port 1)	(TxD Port 1)	PIT1 C1
29	PIT1 H3	DSR Port 4	DCD Port 4 (RxD Port 1)	PIT1 C4
30	GND	RTS Port 4	RxD Port 4	PIT1 C7
31	PIT1 H4	CTS Port 4	TxD Port 4	NC
32	GND	GND Port 4	DTR Port 4	NC

Note: **The signals marked in parenthesis are only available with the use of FH-002 hybrids, which are available at Force Computers.**

3.9 Introduction to VMEPROM Firmware

The VMEPROM firmware is a full multitasking multiuser real-time system. It is stored in the on-board System Flash Memory and provides the following functionality:

- Configuration of the board
- Starting an application
- Application hooks
- Shell with over 80 commands
- Programming of Boot Flash devices

3.9.1 Booting up VMEPROM

To start VMEPROM, the rotary switches must both be set to 'F.

Table 6 **Rotary Switches**

MODE 1	F
MODE 2	F

The different functions of the rotary switches are described in detail in the VMEPROM section of the *SYS68K/CPU-30 R4 Technical Reference Manual.*

Correct Operation
To test the correct operation of the CPU board, the following command must be typed in:

```
# SELFTEST <CR>
```

The selftest command tests some I/O devices, the main memory and the system timer tick interrupt. Depending on the size of the main memory, it may last a different amount of time (count about one minute per megabyte).
After all tests are done, the following message will appear on the terminal screen:

```
VMEPROM Hardware Selftest
-------------------------
I/O test ........ passed
Memory test ..... passed
Clock test ...... passed
```

3.10 The SYS68K/IOBP-1

Force Computers offers an IOBP-1 back panel for easy connection of I/O signals through the VMEbus P2 connector. This board can be plugged into the VMEbus P2 connector of a VMEbus board which carries the SCSI, FDC, and serial I/O signals on the VMEbus P2. It contains a SCSIbus connector (P2), a floppy disk interface connector (P3), and a serial I/O connector (P5). All VMEbus P2 connector row A and C pins are routed to

the 64-pin male connector (P4). The pinout of these connectors is shown in the following table.

Table 7 SYS68K/IOBP-1 Pin Assignment

PIN No. IOBP -1 P1	PIN No. VME bus P2	Row A Signal Mnemonic		Row B Signal Mnemonic	Row C Signal Mnemonic	
32	1	DB 0	SCSI	-		
31	2	DB 1	SCSI	GND		
30	3	DB 2	SCSI	-	Drive Select 4 (2)	FDC
29	4	DB 3	SCSI	-	Index	FDC
28	5	DB 4	SCSI	-	Drive Select 1	FDC
27	6	DB 5	SCSI	-	Drive Select 2	FDC
26	7	DB 6	SCSI	-	Drive Select 3 (1)	FDC
25	8	DB 7	SCSI	-	Motor On	FDC
24	9	DB P	SCSI	-	Direction In	FDC
23	10	GND		-	Step	FDC
22	11	GND		-	Write Data	FDC
21	12	GND		GND	Write Gate	FDC
20	13	TERMP-WR	SCSI	-	Track 000	FDC
19	14	GND		-	Write Protect	FDC
18	15	GND		-	Read Data	FDC

Table 7 SYS68K/IOBP-1 Pin Assignment (Continued)

PIN No. IOBP-1 P1	PIN No. VME bus P2	Row A Signal Mnemonic		Row B Signal Mnemonic	Row C Signal Mnemonic	
17	16	ATN	SCSI	-	Side Select	FDC
16	17	GND		-	FDC READY	FDC
15	18	BSY	SCSI	-		
14	19	ACK	SCSI	-	GND	
13	20	RST	SCSI	-	GND	
12	21	MSG	SCSI	-		
11	22	SEL	SCSI	GND	GND	
10	23	C/D	SCSI	-	GND	
9	24	REQ	SCSI	-		
8	25	I/O	SCSI	-		
7	26			-		
6	27	GND		-	Reserved	
5	28			-	Reserved	
4	29	DSR	SER	-	DCD	SER
3	30	RTS	SER	-	RXD	SER
2	31	CTS	SER	GND	TXD	SER
1	32	GND	SER	-	DTR	SER

4 History of Manual Publication

Below is a description of the publication history of this *SYS68K/CPU-30 R4 Installation Guide*.

Table 8 History of Manual

Edition No.	Description	Date
1	First Print	February 1996
2	Description of switch SW11-3 in table 1 has been corrected	May 1996
3	Revised safety note	October 1996
4	"AUI-Ethernet" has been changed.	January 1997
5	Configuration of serial ports 1-4 for RS-232, 422 and 485 completed, location diagram and switch settings of SW12 in table 1 updated	January 1998
6.0	Section "Safety Notes" included	September 1999
7.0	Editorial changes	November 1999
8.0/AA	Editorial changes, added section "Sicherheitshinweise"	September 2001
9.0/AB	Corrected section "Sicherheitshinweise"	September 2001
AC	Editorial changes: updated title page and address page, added copyright page	January 2002

Product Error Report

Product:	Serial No.:
Date Of Purchase:	Originator:
Company:	Point Of Contact:
Tel.:	Ext.:
Address:	
Present Date:	
Affected Product: ❑ Hardware ❑ Software ❑ Systems	Affected Documentation: ❑ Hardware ❑ Software ❑ Systems
Error Description:	

This Area to Be Completed by Force Computers:

Date:

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